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ABSTRACT

The Articulation Committee Telecommunication project was undertaken to assess how communications technologies are currently being used to facilitate articulation committee business across the province of British Columbia (BC). The project provided an opportunity to determine the level of use of communications technologies such as e-mail, list servers, Web sites, audioconferencing, and videoconferencing among typical instructors within the B.C. postsecondary system. The project also provided the means for determining what these instructors or users perceive to be the benefits and barriers to increasing their use of advanced telecommunications. Pilot projects and the results of the articulation committee survey indicate that technologies such as fax, telephone, postal service, and e-mail were identified as being relatively widely used. Audio conferencing, list servers and Web sites were identified as being emergent, with many committees expressing a desire to increase their use of these technologies. Minimal interest was indicated for use of videoconferencing and desktop videoconferencing. The survey of articulation committees provided data for determining the barriers to increasing the use of telecommunications technologies. These benchmark data form the basis for the recommendations to the B.C. Council on Admissions and Transfer (BCCAT), the Center for Curriculum, Transfer and Technology (C2T2), postsecondary institutions, and articulation committee members and chairs. These recommendations provide practical steps for how these stakeholders can work together to reduce barriers to effective implementation and use of telecommunications. Explicitly the project highlights that technologies have the potential to enhance the processes associated with articulation committee business, but they cannot replace face-to-face meetings. Appendices include the Articulation Committee questionnaire and list of respondents; list of resources and annotated resources; description of videoconference pilot and cost analysis; and acknowledgements. (AEF)

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Articulation Telecommunication Project 1998 Report

October 1999

Prepared for the

British Columbia Council on Admissions and Transfer

and the

Centre for Curriculum, Transfer and Technology

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Executive Summary

The Articulation Committee Telecommunication project was undertaken to assess how communications technologies are currently being used to facilitate articulation committee business across the province. The project provided an opportunity to determine the level of use of communications technologies such as e-mail, list servers, web sites, audio conferencing, and videoconferencing among typical instructors within the B.C. post-secondary system. The project also provided the means for determining what these instructors or users perceive to be the benefits and barriers to increasing their use of advanced telecommunications in order to reduce travel time and improve communications in carrying out articulation-related activities. Finally, the project is intended to help any interested articulation committees move forward in their use of telecommunications.

Based on the pilot projects and the results of the articulation committee survey, technologies such as fax, telephone, postal service, and e-mail were identified as being relatively widely used. Audio conferencing, list servers and web sites were identified as being emergent, with many committees expressing a desire to increase their use of these technologies. Minimal interest was indicated for using videoconferencing and desktop videoconferencing, indicating that these are still regarded as future technologies.

The survey of articulation committees provided useful data for determining the barriers to increasing the use of telecommunications technologies. These benchmark data form the basis for the recommendations to the British Columbia Council on Admissions and Transfer (BCCAT), the Centre for Curriculum, Transfer and Technology (C2T2), post-secondary institutions, and articulation committee members and chairs. These recommendations provide practical steps for how these stakeholders can work together to reduce barriers to effective implementation and use of telecommunications

Explicitly the project highlights that technologies have the potential to enhance the processes associated with articulation committee business but they cannot replace face-to-face meetings. The report addresses the need identified from the survey and pilots by providing 'how-to' information in the Appendixes on getting started with different technologies to run effective business meetings and to develop methods to share information within a discipline.

It is hoped that this information will assist those articulation committees and their individual representatives to use technologies to help them share information, whether on issues of transfer credit, discipline content or questions of pedagogy. It should also provide BCCAT with a sample of how articulation business is being conducted and C2T2 with insights on how technologies are being adopted.

Introduction

The Articulation Committee Telecommunication project was undertaken as a collaborative effort by the Centre for Curriculum Transfer and Technology and the British Columbia Council on Admissions and Transfer to assess how communications technologies are currently being used to facilitate articulation committee business across the province. The project provided an opportunity to determine the level of use of communications technologies such as e-mail, list servers, web sites, audio conferencing and videoconferencing among typical instructors within the B.C. post-secondary system. The project also provided the means for determining what these instructors or users perceive to be the benefits and barriers to increasing their use of advanced telecommunications in order to reduce travel time and improve communications in carrying out articulation-related activities.

The project was broken into three efforts:

1. Pilot projects for two articulation committees who expressed a desire to increase their use of communication technologies.
2. Survey of articulation committees regarding current use, desired levels of use and barriers perceived if greater use was desired.
3. Compilation of a short list of useful resources on different technologies.

This report describes the outcomes of the formal pilot projects undertaken by the Practical Nursing Articulation Committee and the English as a Second Language Articulation Committee. It also discusses three independent initiatives undertaken by the Undergraduate Mathematics, Adult Education, and Computing Education articulation committees. In addition, the report presents the findings of a survey of articulation committee chairs and provides recommendations about how stakeholders can overcome barriers to using telecommunications technologies more effectively. An annotated list of resources is included in Appendixes III and IV.

Background

The mandate of the British Columbia Council on Admissions and Transfer (BCCAT) is to facilitate admission, articulation and transfer arrangements among the colleges, university colleges, institutes and the Open Learning Agency, and the universities. Specifically, the Council, in cooperation with post-secondary institutions, develops policies that facilitate transferability of post-secondary credit courses so that credit can be applied toward baccalaureate degrees in degree granting institutions. (For further information, see the BCCAT web site at: http://bccat.bc.ca)

The work of British Columbia's articulation committees is essential in negotiating institutional transfer agreements. B.C.'s 68 articulation committees are organized around various course and program areas, with faculty representatives from each post-secondary institution that offers courses or programs in a particular discipline. Articulation committees meet once or twice a year to discuss articulation issues, to anticipate changes, and to resolve differences. Committee members regularly have a need to distribute information to their colleagues across the province. Committee members also represent a diverse group in terms of varying levels of access to and acceptance of telecommunications technologies. For these reasons, B.C.'s articulation committees

were considered an ideal group to study to determine how effectively telecommunications technologies are currently being used, and to determine what prevents users from taking greater advantage of telecommunications technologies in their work environments.

The objectives of the Articulation Committee Telecommunication project were to:

- determine what methods and what levels of electronic or advanced communication are being used by articulation committees in British Columbia,
- determine if there is a need for a change in the mix of communication methods used, and
- recommend ways to facilitate change if change is desired.

Pilots and Initiatives

Two formal pilot projects were implemented in the hope of increasing the use of communication technology to enhance articulation committee work. These pilots involved a meeting via videoconference undertaken by the Practical Nursing Articulation Committee, and the use of an electronic distribution list by the English as a Second Language Articulation Committee. In addition to these formal pilots, the researcher investigated existing communications initiatives undertaken independently by articulation committees. These initiatives include a web site created by the B.C. Committee on the Undergraduate Programme in Mathematics; an "online" meeting via electronic mail held by the Adult Education Articulation Committee; and a mailing list used for document sharing which was implemented by the Computing Education Articulation Committee.

Videoconference Pilot

A one-hour combined video and audio conference meeting of the Practical Nursing Articulation Committee was held on July 22, 1998. In preparation for the conference, participants followed the guidelines at the British Columbia Ministry of Highways videoconferencing site. Two of the four participating institutions, Malaspina University-College and the College of the Rockies, had videoconferencing facilities in place. Vancouver Community College representatives were able to make arrangements to use the videoconferencing facilities at Douglas College for this one-time project. Okanagan University College was linked via audio only.

The audio/videoconference was successful in carrying out articulation business, however, the participants did not feel it would be able to replace a regular all-day or two-day meeting. Based on their experience, participants felt that it would make sense to use a videoconference approach if issues needed resolution in between scheduled face-to-face meetings and if groups of people at various locations needed to participate. There was general agreement that participating in the conference was stressful. For this reason, it was felt that conferences longer than the one hour spent in this pilot might not be productive.

Additional details outlining the preparation for the videoconference, analysis of the procedure, and suggestions for future actions are included in Appendix V. A cost analysis comparing an audioconference and a face-to-face meeting is included in Appendix VI.

List Server Pilot

The English as a Second Language (ESL) Articulation Committee expressed interest in the invitation to pilot increased use of communication technology. Committee members had experience working collaboratively to produce a document on ESL resources for the B.C. Council on Admissions and Transfer web site and were interested in improving communication to enhance their work on similar group projects.

The ESL Articulation Committee had tried a list server previously, with one committee member creating the list and sending instructions to other members on how to join. Few members found the time to join, causing frustration for the initiator. Although the process was not difficult, even the short amount of time it took to locate the information and join the list proved to be too much for most committee members. To avoid this problem in the pilot, it was agreed that the moderator would add all committee members to the list. Information sent out via the list server would be recognized as the official means of communication for the committee. There were concerns about disenfranchising some members who are not regular users of e-mail. Those members who share a computer to check their e-mail find it difficult to participate. For instance, one committee member provides student support from home and does not own or use a networked personal computer.

This mailing list has now been active since September 1998. The committee chair reports that of approximately 25 members, a core of about 12 members participate actively. New topics are discussed on a weekly basis, and the list has been a rich source of interaction and productive information sharing for this group. The chairperson has not investigated whether the remaining committee members are 'silent observers' or are unaware of the discussion activity among the list server group.

Conclusions:

- Participation rates are higher if names are added by the list manager, rather than self-subscription to the list by individual members.
- A core group of committee members participates regularly and finds the list productive.
- Some committee members are either silently observing (lurking) or not receiving the material.
- Learning curves for individuals vary — some find it easy to get up and running, others find it more difficult.

Developing a Web Site

The B.C. Committee on the Undergraduate Programme in Mathematics, one of the most advanced users of technology, has implemented a web site for sharing committee information (http://www.camosun.bc.ca/~bccupm/). The site was developed as a project by the committee chair who was interested in learning how to build a web site. It includes contact information for other committee members, information on upcoming meetings and links to related subject-oriented sites.

The site took approximately four months to develop: a month to investigate possible tools and approaches, another month learning how to use the tools that were selected, and two months collecting the information and constructing and testing the web pages.

The BCCUPM site is extremely well done, reflecting the considerable time and effort that went into the planning and learning process. The site should prove helpful for others who are considering a similar approach, however, other committees who lack advanced tools or extensive development time should not feel compelled to live up to such a high standard. A simple, text-based site would also be adequate for disseminating committee information such as agendas, minutes and attachments, related background information, etc.

Meeting Online

The BC Committee on Adult Education held an online meeting via e-mail in the spring of 1998. The meeting agenda was circulated to the members, various topics were discussed, and some decisions reached. There was a one-week time limit. The chair considered the meeting a mixed success, conceding that things were accomplished, although probably not as much as would have been at a face-to-face meeting. Regret was expressed that the lack of personal contact limited the committee chair's ability to locate a replacement for herself.

Using a List Server

The Computing Education Committee set up a list server for their group in September 1998, about a month prior to the semi-annual face-to-face meeting. Surprisingly, this list is not very active, even though its members know how to use a list server and have ready access to computers. Members are sensitive to the high volumes of e-mail they and their colleagues receive. In effect the members force their committee chair into the role of list moderator by sending their messages to her and expecting her to use her judgment about whether to re-post to the entire list. From discussions at the meeting, it was clear that this group feels they have plenty of sources for discipline-related information and would prefer this list to be used exclusively for meeting information and articulation business. Members do not want to be bothered by general information postings or requests.

The list was very useful for distributing agenda drafts prior to the face-to-face meeting, for distributing institutional status reports prior to the meeting, and for quickly distributing the meeting minutes afterwards. The format for distributing the status reports was problematic with varied opinions on what was the best format to use. Unix-users wanted everything as text in the message body, while others preferred RTF (Rich Text Format, a standardized format which most word processors can display). Some members favoured HTML, which can be read with a browser, which most current word processors can produce, and which can be included either in the message body or as an attachment.

Survey of Articulation Committee Chairs

A questionnaire was distributed to articulation committee chairs to determine what communications technologies were being used, whether an increase in the use of these technologies was desired, and what the perceived barriers were to increasing technology use if it was deemed appropriate. Of the 65 questionnaires that were mailed, 39 responses were received, a 60% response rate. The survey questions are included in Appendix I, and a list of the committees that participated in the survey appears in Appendix II. The detailed survey response data is available on request at the Centre for Curriculum, Transfer and Technology offices.

Background Questions:

Background questions were asked to determine committee size, frequency of meetings, and "non-technical" communication strategies used. As detailed below, most committees meet once or twice a year. They range in size from having representation from 5 to 27 institutions. Over the past two years, attendance at meetings has ranged from 5 to 50 members. Mail via Canada Post is used infrequently (once or twice a year), and couriers are used very rarely (only 6 of 39 committees reported ever having used one). The survey did not focus on fax, telephone and voice mail, though these standard technologies appear to be the major means of communication among articulation committees.

How many times has the committee had a face-to-face meeting in the past two years?

Most committees (64%) meet once a year on average (over the two year period, twenty-five of 39 committees reported a total of two meetings) meaning that for 64% of the committees, an annual meeting is held. Nine committees (23%) reported meeting three or four times during the two-year period. Two committees reported only meeting once in the two years, and two had met "five or more" times. (One questionnaire had "no response" to this question).

How many public post-secondary institutions have sent a representative to a meeting in the past two years?

According to the BCCAT web site, there are 27 public post-secondary institutions in British Columbia. Some articulation committees have representatives from most institutions, with close to half (43.7%) having more than 16 institutions, about one-quarter with 11 to 15, and another quarter with 10 or fewer institutions represented.

Table 1. Numbers of institutions represented at meetings in the past two years

Response Range	Number of respondents in that range	% of those surveyed	% of those who responded to the question
1 to 5	5	12.8 %	15.6 %
6 to 10	5	12.8 %	15.6 %
11 to 15	8	20.5 %	25.0 %
16 and greater	14	35.8 %	43.7 %
* No response	7	17.9 %	

How many (individual people) attendees did you have at your largest meeting in the past two years?

While each institution tends to have one official representative, sometimes institutions have multiple programs and send more than one representative. Observers also may attend committee meetings. The numbers vary widely among the committees, from quite small committees of fewer than 10, to the largest committee reporting 50 attendees at a meeting.

Table 2. Numbers of attendees by institution

Response Range	Number of respondents in that range	% of those surveyed	% of those who responded to the question
1-10	5	12.8 %	14.2 %
11-20	8	20.5 %	22.8 %
21-30	13	33.3 %	37.1 %
31 and greater	9	23.0 %	25.7 %
* No response	4	10.2 %	

Do you have on-going representation from other groups?

Sixty-nine percent of the committees reported "Yes" to this question, with most having representatives from K-12, many from industry groups or private post-secondary institutions.

Does the committee use smaller groups (executive, task force, or subcommittee) to carry out some of the work?

Fifty-four percent of the committees responded that some work is carried out by smaller groups.

Approximately how many times a year is something mailed (Canada Post) to the entire group?

The majority of articulation committees mail something approximately two to four times a year.

Approximately how many times a year do you use a courier for articulation business?

Eighty-three percent of those who responded indicated they had never used a courier; only 6 had used one, all only once.

Communication Technology Questions:

The survey presented definitions and posed questions about the use of the following technologies: e-mail, list servers, document sharing, bulletin boards, web sites for articulation business, audio conferencing, videoconferencing, and desktop videoconferencing. (The questionnaire is included in Appendix I.)

For each technology, participants were asked about frequency of current use, benefits, and perceptions about optimum levels of usage. If a desire for increased use was indicated, participants were asked to rank the barriers they felt were relevant. The list of twelve possible barriers was repeated for each of the technologies. For the purposes of this report, the data regarding barriers to greater use is summarized according to frequency of inclusion as a barrier, as well as frequency of inclusion as one of the top three barriers.

E-mail

Results of the survey indicate that, of the eight technologies, e-mail is the most widely used by articulation committees. As figure 1 shows, 33 of 39 committees report using e-mail in some capacity for committee business, with 18 committees using it less than monthly; and 6 committees using it weekly or more. Respondents expressed the benefits of using e-mail as being fast, efficient, cheap, and easy to use.

Figure 1. Current E-mail Use

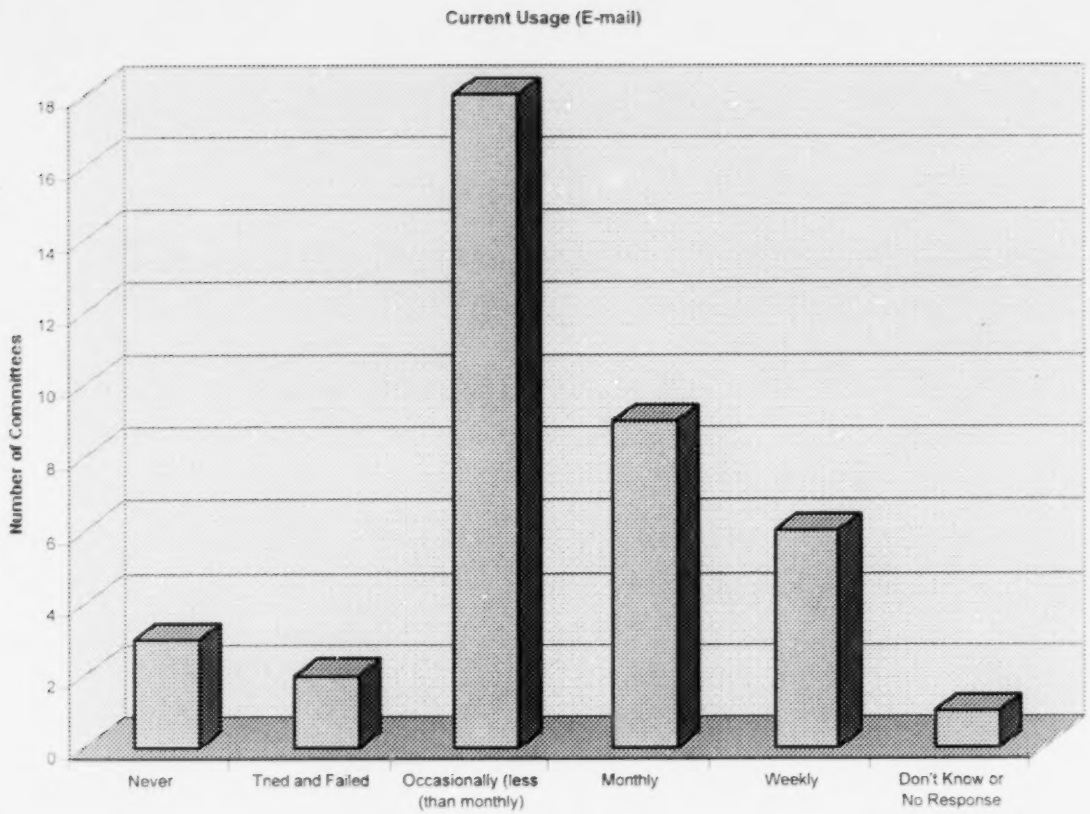
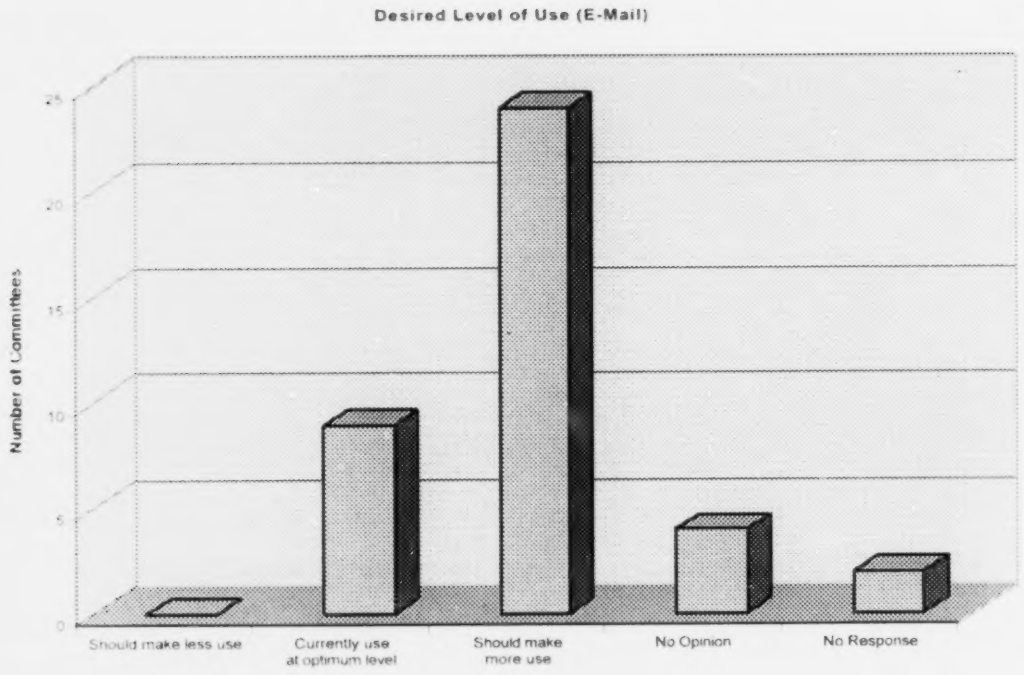


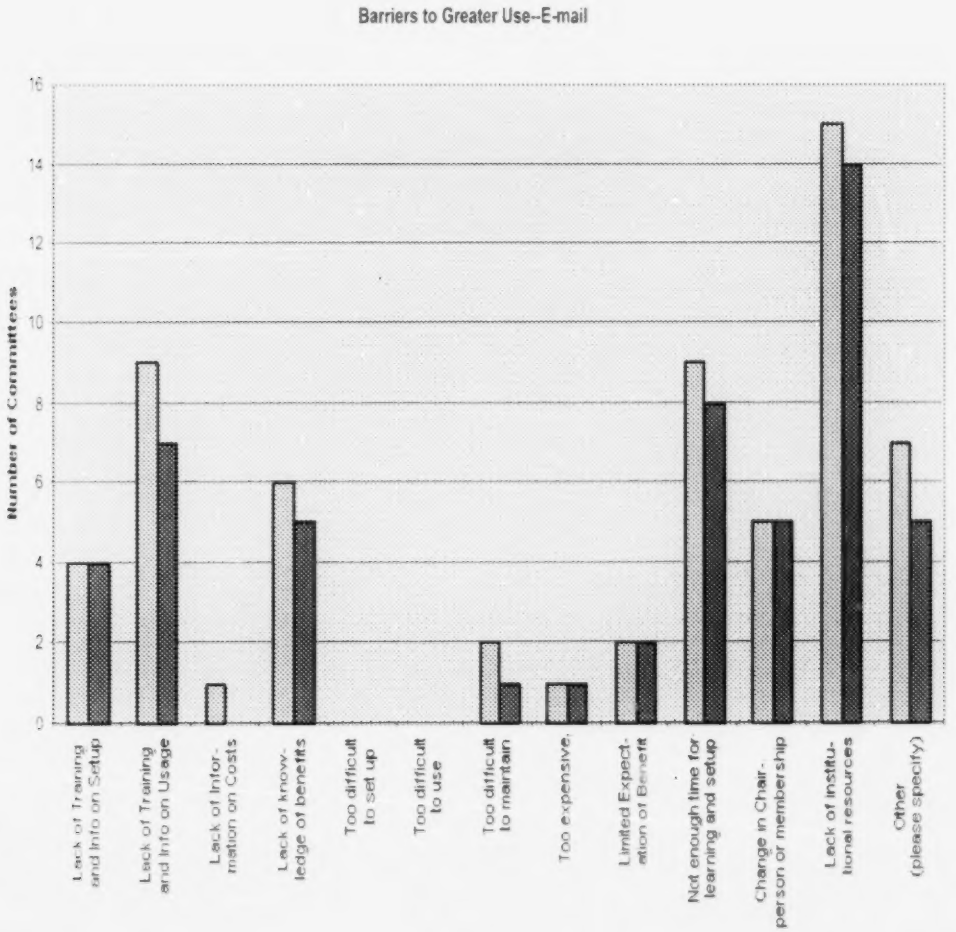
Figure 2. Desired Level of E-mail Use



Over half of the committees who responded also indicated a desire to increase their use of e-mail for articulation business, as illustrated in figure 2.

As Figure 3 indicates, the greatest perceived barrier to increased use of e-mail was expressed as "lack of institutional resources". Comments regarding this limitation range from "not all committee members have access to e-mail" to "not all have computers, some computers are old and limited in function."

Figure 3. Barriers to Greater E-mail Use



List Servers

A list server or e-mail distribution list allows central maintenance of a list of the committee members so any member can easily send an e-mail message to the list name and all members will receive the message.

In contrast to e-mail, 26 of the 39 committees have never tried list servers. Less than ten committees currently use a list server as a way to manage group e-mail. The patterns for desired levels of use indicate clearly that committees want to make more use of list servers with 25 of the 39 committees indicating that they want to increase their use of this technology.
The most widely reported barrier to greater use of list servers was lack of information and training on how to set it up, closely followed by lack of training and information on how to use it, lack of institutional resources and not enough time for training and setup by committee members. Written comments describing the barriers repeated concerns that not all members have computers, know how to use a list server, or have time to learn. Difficulties in keeping up-to-date with changing memberships and the lack of priority of articulation issues were also issues that were mentioned.

Document Sharing

Document sharing may include a variety of ways of using technology to distribute or modify documents; anything from "dumping" text form into e-mail at the lowest level, up to a very sophisticated real-time shared editing function. Generally, document sharing refers to using attachments to e-mail in order to retain formatting that would be lost in a text-only version.

The majority of committees (19 out of 39) reported that they had never used document sharing; two have "tried and failed", 17 report using it "less than monthly" or "monthly". Infrequent use reported by committees that do use document sharing is likely due to the nature of articulation business, being an occasional task rather than a frequent routine. Nineteen committees reported a desire to make more use of document sharing. Three thought they use it at the optimal level; the rest had no opinion or no response.

The primary barrier preventing greater use of document sharing was reported as lack of institutional resources, followed by lack of training. Lack of training on how to set it up and lack of training on how to use it both appear to be concerns. Seven respondents specified "other" reasons, which can be summarized from the comments as having to do with difficulties in doing document sharing between a variety of different formats.

Bulletin Boards

The category of bulletin board was described to include online bulletin boards and conferencing environments, if used in support of articulation committee business. Currently, no committees appear to be using bulletin boards for articulation committee business, although 13 committees expressed a desire to do so. Twenty-six committees either had no opinion or did not respond to the question. Comments ranged from indicating that bulletin boards would help in information sharing, to indicating that other technologies have taken over this function.

The top two reasons for not making greater use of bulletin boards are lack of training in setting them up and lack of training on how to use them.

Web Sites

Currently, only one articulation committee has a web site. No other committees reported trying to use the web as a communication tool. The one committee with the web site feels they use it at the optimal level, 18 others want to make more use of this technology, 17 have no opinion and 3 did not respond.

The top barrier to having a web site was lack of training on how to set it up. The second barrier identified was lack of time for learning and setup (most committee members don't have time to learn). Committee chairs recognize that there is significant effort required to set up and maintain a web site. Their articulation responsibilities do not have a priority or a time commitment to support this effort.

Audio conferencing

While audio conferencing can be implemented in other ways, it usually means a telephone conference call, with a number of locations using an audio conferencing bridge.

Twenty-five committees reported never using audio conferencing. Two committees reported having tried and failed, and 10 committees make occasional use of audio conferencing.

Seven committees feel that they currently use audio conferencing at the optimal level, seven groups want to make more use of it, and 25 either have no opinion or did not respond. The large number of "no opinion" may indicate that more information is needed by committee chairs in order to form an opinion.

The barriers to increasing the use of audio conferencing were identified as: lack of training on setup, lack of training on usage, too difficult to set up, too difficult to use, too expensive, lack of institutional resources (not everyone has a speaker phone), and "other".

Videoconferencing

Only two committees reported having experience with videoconferencing for articulation committee business. One of these is the pilot study described earlier in this report. Ten committees think they should make more use of videoconferencing, 23 have no opinion.

The top reasons stated for not making greater use of videoconferencing are lack of institutional resources and expense.

Desktop Videoconferencing

No committee reported any use of desktop videoconferencing for articulation committee business. Seven committees indicated interest in making more use of desktop videoconferencing, the majority (32) had no opinion. The major barriers stated were lack of training and lack of institutional resources.

Overview of Project Results

As a result of carrying out two pilot studies and a survey of articulation committees, it is possible to group communication technologies by usage as follows: relatively widespread, emergent, and future. Responses to the survey indicate that committees are at different points along the spectrum in terms of acceptance and use of communication technologies. For example,

while many committees currently use e-mail, others might place it in the emergent or future category.

Technologies with a fairly wide degree of current usage include fax, telephone, postal service, some e-mail, and audio conferencing. Emergent technologies (those that many committees expressed interest in increasing their use of) include e-mail, audio conferencing, list servers/mailing lists and web sites. Minimal interest was shown in using videoconferencing and desktop videoconferencing, indicating that these are still regarded as "future" technologies. In order for committees to form opinions and plan for their use, more education is required about the operational characteristics, and the potential benefits and costs of these "future" technologies.

It is in the area of "emergent" technologies that committee members have provided important data about the barriers that prevent greater use. These data form the basis of the recommendations put forward in this report. These recommendations provide practical steps that can be taken by the British Columbia Council on Admissions and Transfer, the Centre for Curriculum, Transfer and Technology, post-secondary institutions, and articulation committee chairs. It is hoped that these recommendations will lead to more effective use of communications technologies in order to enhance articulation committee work.

Conclusions

1. Articulation committee meetings are used for more than negotiating transfer agreements. Committee members also share curriculum ideas, textbook selections, and professional development information. These are important incentives to greater communication among faculty in the same discipline at different institutions.
2. Committee chairs believe they should be making greater use of e-mail, document sharing and web sites, and have identified some significant barriers to such greater use.
3. Members of articulation committees are busy, and articulation is not usually a priority activity. There appears to be very limited time and budget for implementation of new communication strategies for articulation business.
4. The majority of committee chairs have "no opinion" on the level of use of bulletin boards, audio conferencing, videoconferencing and desktop videoconferencing.
5. Committees use technologies they have learned for other purposes and then apply or transfer those technological skills to the articulation process.

Recommendations

The following recommendations are offered to assist in reducing barriers to the use of communications technologies by articulation committees. These recommendations are addressed to the following stakeholders:

The British Columbia Council on Admissions and Transfer (BCCAT)

1. Lack of information on what technologies are available and how to use them was identified as a significant barrier for many committees. To address this problem, the BCCAT should consider:
   a) promoting the sharing of information among committees about the use of communication technologies by publishing this report (and its list of resources) on their web site, and by providing related information in the articulation handbook.
   b) inviting presentations by successful adopters to annual chairs' and liaison administrators' meetings.

c) providing orientation information to new chairs/new committee members via an interactive online training session. This orientation could include information from the handbook and information on communication technologies and strategies used by committees.
d) encouraging networking by providing a chat or conference site on their web site for information sharing between articulation chairs, liaison administrators, and the Council.

2. The turnover of committee chairs and members was also identified as a problem in maintaining communication within committees. To address this, BCCAT should consider:
   a) approaching C2T2 or one of the larger system institutions to provide a central site for list servers. This would provide consistent access and reduce the tendency for lists to die out when the duties of committee chairs move from one institution to another.
   b) exploring the development of web archives (agendas, attachments, minutes) so that committees can develop a collective memory
   c) extending the term of the committee chair to a two- to three-year term to ensure continuity for articulation committee representatives.

3. Using telecommunications for articulation is currently considered a low priority for the people charged with articulation responsibilities. To improve this, BCCAT should recognize and encourage articulation committees to be the locus for those activities that faculty perceive as having value such as information sharing, professional development and networking. The committees currently provide a means for information sharing on a variety of discipline-related areas, in addition to articulation. The articulation process is enhanced by this synergy. Telecommunication strategies could improve this synergy if built into the process.

4. Integration of telecommunications into articulation committee processes will continue to be an ongoing challenge. BCCAT should continue to work with C2T2 to address this issue.

Institutions

1. "Lack of institutional resources" was widely reported as a significant barrier to the use of e-mail and document sharing. Committee chairs report that many faculty do not have access to up-to-date computers. To address this, institutions should consider:
   a) using articulation committee membership as a criterion for allocating computers.
   b) providing professional development opportunities in the area of telecommunication tools

2. Difficulty getting started was also reported to be a significant barrier to increased use of communications technologies. Considerable startup effort is required for web site in particular. Institutions should consider:
   a) using student projects to assist in implementation, particularly for web sites. Audio conferencing, videoconferencing and list servers would benefit from assistance by students in relevant studies.

3. To address the problem of lack of time by committee members to learn, use, and maintain communication technologies, institutions should recognize and encourage use of the articulation committee system for networking and sharing of discipline-related issues.

4. The turnover of committee chairs and members is also a factor that interrupts the use of telecommunications at the institutional level. Institutions should consider:
   a) working with BCCAT to encourage and support two- to three-year terms for articulation committee representatives to ensure continuity.
   b) supporting the need for outgoing representatives to train and support their successors.

Articulation Committee Chairs

Articulation committee chairs have a vital role in using communications technologies to further articulation business. To assist in using telecommunications more effectively, they should consider:

a) using some of the communication channels (e-mail, list server, web site) to share curriculum and for other networking activities.
b) participating in online activities if BCCAT provides communication opportunities for chairs.
c) encouraging wider participation for articulation business where appropriate. In some situations, use of the technologies can enable participation and/or observation by faculty other than the official representatives.
d) ensuring that all future committee web sites are linked to and from the BCCAT web site.

Articulation Committee Members

Articulation committee members can ensure the effective use of communications technologies to enhance committee activities through their own initiative (including professional development in telecommunications techniques). They can also commit to training and supporting their successors when it is time to leave the committee.

The Centre for Curriculum, Transfer and Technology

The Centre should continue to work with British Columbia Council on Admissions and Transfer to support and advise on telecommunication and professional development activities.

- The Centre should consider offering a basic support service within available resources (e.g. - server space, website template, listserve function) for those articulation committees wishing to make greater use of telecommunications technologies.
- Work with interested articulation committees on the gathering and sharing of discipline-specific educational technology teaching resources. (Note: An example of this type of work is evident in the Online Educational Resources project. See Appendix VII. http://www.ctt.bc.ca/edtech/oer)
- Continue to work with BCCAT on the present and future implications of telecommunications capabilities for articulation committees.

Appendix I: Articulation Committee Questionnaire

The following questionnaire was mailed to articulation committee chairs in May of 1998 and again in October. The detailed technology usage questions were the same for the eight listed technologies so are not repeated here for each technology.

Questionnaire for articulation committees on use of telecommunications and data communications.

To:	Chairs (or outgoing chairs) of articulation committees in British Columbia.

Hello articulation chair:

Your assistance in filling out the following questionnaire will be greatly appreciated. The purpose of the questionnaire is to find out what (if any) communications technologies your committee uses, and whether you desire to increase your use of telecommunication and data communication technologies.

We fear you are overloaded but we beg your indulgence in filling out this questionnaire. The questionnaire appears long, but the intention is that as committee chair or active member you shouldn't have to do any research in order to fill it in. Approximate numbers are OK if you don't have the exact attendance numbers, for example. It will probably take you 15 to 30 minutes to fill it in. So, do it now and get it off your desk!

What's in it for you?

- if we can find out what is going on, your committee may be able to take advantage of work already done by other committees (all chairs will receive a copy of the report).
- if there are areas where some amount of additional work will help all of the committees, it will be easier to arrange to have that work done.
- if there are barriers to implementation, we can start to work to reduce or eliminate these barriers
- your committee can probably get more work done between annual or semi-annual meetings if you can communicate effectively between the meetings.

Sponsor: C2T2, Centre for Curriculum Transfer and Technology, with the support of BCCAT, British Columbia Council on Admissions and Transfer

Completed questionnaires may be submitted by mail, fax or e-mail.

Mail: Sarah Stephens
Faculty of Commerce and Business
Douglas College
PO Box 2503
New Westminster, BC V3L 5B2

Fax: Attn: Sarah Stephens, Faculty of Commerce and Business
(604) 527-5969

E-mail stephenss@groupwise.douglas.bc.ca
(you may also use this e-mail address to request a copy of the survey be e-mailed to you.)

We request that responses be submitted by May 30.

Questionnaire for articulation committees on use of telecommunications and data communications.

Identifying information :

Name of articulation committee (please spell out)

Acronym or abbreviated name if any: _____

Contact person name: _____

E-mail address (if any) _____

Phone number (___) _____

Fax number (___) _____

Job title: _____

Institution name : _____

Mailing address: _____

Completed questionnaires may be submitted by mail, fax or e-mail.

Mail: Sarah Stephens
Faculty of Commerce and Business
Douglas College
PO Box 2503
New Westminster, BC V3L 5B2

Fax: Attn: Sarah Stephens, Faculty of Commerce and Business
(604) 527-5969

E-mail stephenss@groupwise.douglas.bc.ca
(you may also use this e-mail address to request a copy of the survey be e-mailed to you.)

Background information on the committee

1. List the program areas which are covered by the committee (if not obvious from the title of the committee).

2. How many times has the committee had a face-to-face meeting in the past two years? (please circle)

   1 2 3 4 5 or more

3. How many public post-secondary institutions have sent a representative to a meeting in the past two years? (you may attach a list if it's available)

---

4. How many (individual people) attendees did you have at your largest meeting in the past two years?

---

5. Do you have (on-going) representation from other groups? (private post-secondary, K-12, industry, etc.)

Please circle Yes No

If yes, please indicate which group(s) and how many organizations and individuals from each.

6. Does the committee use smaller groups (executive, task force, subcommittee) to carry out some of the work?

Please circle Yes No

If yes, please briefly describe:

7. Approximately how many times a year is something mailed (Canada Post) to the entire group?

8. Approximately how many times a year do you use a courier for articulation business?

Use of Technology

For each technology category, you are asked the same one-page series of questions. Please read through the first "set" and then respond to each.

The technologies are listed here and briefly described.

- **e-mail** to individual or groups of committee members.

E-mail or electronic mail allows computer-based exchange of text information (or in some cases, more sophisticated formats)

- e-mail via **listserv**.

A **listserv** (or list server) makes it easier to exchange e-mail with a group of users. The list is maintained centrally, and users can mail to the "listserv" address and the message is automatically forwarded to everyone on the list (into their usual e-mail in-box). Some listservs are "moderated" meaning that the forwarding is mediated by a human rather than occurring automatically.

- document sharing (attachments to e-mail)

documents can be attached to e-mail messages in the original format, for distribution or for co-authoring or editing of drafts. These documents can be in any format---a word-processor, or spreadsheet, graphics, etc.

- bulletin-boards or other on-line conferencing software

similar to e-mail via listserv except it is usually easier to "pick up" in the middle, as the history of the ongoing discussions can be easily accessed.

- web server for the articulation committee

The world-wide web allows very sophisticated formatting of information onto your computer screen; private areas may be password-protected.

- teleconference (voice)

telephone conference calls are the most frequently used example.

- videoconference

see and talk to the people at the other location with use of video cameras, monitors and other specialized equipment.

- desktop videoconference

small cameras can be attached to each microcomputer, and if linked to BCNet (or otherwise to the Internet), you can see and be seen (on your computer screen) as well as being heard.

- Other

Also, your comments are encouraged.

For each technology, the following page of questions was asked:

1A. How frequently do you carry out committee business using the above-named technology? (please circle the number beside your choice)

1- Never (skip to question 1C below)
2- tried and failed
3- occasionally (less than monthly)
4- monthly
5- weekly
6- don't know

1B. If you currently use this technology, what benefits does the committee see from its use?

1C. Do you feel your committee is making the *best use* of this technology?

1- we should make less use of this technology
2- we use it at the optimum level
3- we should make more use of this technology (see next question)
4- no opinion

1D. If you responded to the above question with **3** (think your group should make more use) to the above, please rank the following possible barriers to use of the technology. Place a "1" beside the item which you feel is the GREATEST barrier, "2" for the next barrier, up to as many as you feel are relevant barriers to your committee's use of the technology.

_____ lack of training and information on how to set it up

_____ lack of training and information on how to use it

_____ lack of information on costs

_____ lack of knowledge of the potential benefits

_____ too difficult to set up

_____ too difficult to use

_____ too difficult to maintain

_____ too expensive

_____ limited expectation of benefit

_____ not enough time available by committee members for learning and setup

_____ changes in chairperson or committee membership

_____ lack of institutional resources (no videoconferencing facility, no PC's or software on desktops, minimal clerical support for maintenance activities, etc.) (please describe)

_____ other (please describe)

1E. What benefits do you expect if you were able to overcome the barriers and increase your committee's use of this technology?

Comments:

Appendix II: Articulation Committees who responded to the Survey

(Surveys were mailed and e-mailed to 65 of 68 B.C. Articulation Committees, 39 responses were received.)

ABE Math
Adult Education
Adult ESL
Allied Dental Educators
Automotive Collision and Refinishing
Automotive Technician Instructors
Biology
Business
Carpentry
Commerce
Communications
Computing Education
Creative Writing
Drafting
Earth Sciences
Economics
Education and Career Planning (ABE) (EDCP)
Electrical
English Studies
Environmental Programs
Fine Arts (Visual Arts)
Forestry
Fundamental Articulation (ABE)
Geography
History
Home Support/ Resident Care
Hospitality Management
Human Services
Mathematics
Music
Nursing
Physics
Practical Nursing
Psychology
Sheet Metal
Sociology and Anthropology
Travel Programs
Welding
Women's Studies

A complete list of articulation committees is available on the British Columbia Council on Admissions and Transfer web site: http://bccat.bc.ca.

Appendix III: Getting Started – The 'How-to' Sources

(For a complete and annotated list of resources see Appendix IV.)

Online Etiquette

The do's and don'ts of online communications.

http://www.etiquette.net/

Email and List Servers

How-to get started with e-mail, free e-mail, commercial products and e-mail distribution lists

http://everythingmail.net

Audio conferencing

Guidelines for using audio conferencing and sources for more information.

http://www.ctt.bc.ca/edtech/audioconf/index.html

Videoconferencing

Includes a five-part training guide.

http://www.bced.gov.bc.ca/vidcon/

Desktop Videoconferencing

List of links and sources for getting started

http://www.ctt.bc.ca/edtech/videoresources.html

Appendix IV: Annotated Resources

Albion Books. *Netiquette home page*. http://www.etiquette.net/Albion.com (17 March 1999).

Overview: "Netiquette" is network etiquette, the do's and don'ts of online communication. Netiquette covers both common courtesy online and the informal "rules of the road" of cyberspace. This page provides links to both summary and detail information about Netiquette. Includes the complete text of the book Netiquette by Virginia Shea, published by Albion Books. Also includes book reviews and ordering information on network etiquette books.

Audience: General

Technology: E-mail, mailing list server.

B.C. Ministry of Education. *Videoconferencing in British Columbia* http://www.bced.gov.bc.ca/vidcon/ [Victoria B.C.] B.C. Ministry of Education (20 May 1999).

Overview: The place to go for information on videoconferencing in British Columbia. Includes everything from a site and site contact list to a five-part training guide including: Facilitator Overview, Host Facilitator Technical Notes, Participant Overview, Participant Hints and Tips, and Videoconference Site Coordinator. Also includes "Interesting Videoconference Links".

Focus: Holding a successful videoconference in British Columbia educational sector. Tutorial and reference.

Audience: Beginner to advanced.

Medium: Web site

Technology: Videoconferencing

Burge, Elizabeth and Judith M. Roberts. *Classrooms with a Difference: Facilitating Learning on the Information Highway*. Toronto: Chenelière/McGraw-Hill, 1998.

Overview: Part of the Lifelong Learning series, guides for professionals who want to use learning technologies to facilitate independent learning and communication. First in the series, it provides an overview of four technologies: audio and audiographic technologies, Videoconferencing, and computer network-mediated learning. The importance of participation and interactivity, adult learning, the ten planning questions to ask in choosing a technology , starting with what are the learning needs. Key issues, who is using each technology successfully, how to evaluate success. Extensive bibliography.

Focus: An overview from the instructional/learning perspective.

Audience: Instructors, Educational administrators. Beginner to intermediate.

Medium: Soft-cover book with accompanying softcover Resource Kit.

Technologies: Videoconferencing, audio conferencing, computer network mediated learning.

Centre for Curriculum and Professional Development. *Audio Teleconferencing.* [Victoria, B.C.] The Centre, August 1995. (Available on the web: http://www.ctt.bc.ca/)

Overview: Guidelines for use of audio conferencing in instruction, based on a comprehensive literature review and from practical experience in an audio-teleconferencing project. Contains checklists for each step in the process of planning, setting up, carrying out, and evaluating audio teleconferenced education. Includes an excellent annotated bibliography.

Focus: Use of audio conferencing in instruction.

Audience: Instructors, educational administrators. Beginner to intermediate

Medium: Unbound report, 19 pages.

Technologies: Audio conferencing

Centre for Curriculum, Transfer and Technology. *C2T2 Educational Technology page* http://www.ctt.bc.ca/edtech/. [Victoria, B.C.] The Centre, 15 March 1999 (18 March 1999).

Overview: Educational technology web site for British Columbia. Lots of links to more information about projects, resources, events, tools and user groups. For specific information on audio conferencing: http://www.ctt.bc.ca/edtech/audioconf/; For specific information on videoconferencing: http://www.ctt.bc.ca/edtech/videoresources.html

Audience: Faculty and educational administrators.

Technology: Videoconferencing, audio conferencing, others including computer-mediated communication for instructional purposes.

Centre for Curriculum, Transfer and Technology. *SEEDS: Cultivating Educational Technologies* http://malun1.mala.bc.ca/seeds/ [Victoria, B.C.], The Centre, 1997 (18 March, 1999).

Overview: Explores the use of technology for instructional purposes. In addition to information on establishing a critical framework, this site contains descriptive information, examples, links to related resources for World Wide Web, Interactive Videoconferencing, Multimedia and Computer-mediated Communications. Also provides access to interactive forums on the above topics. The site was developed by B.C. instructional practitioners.

Audience: General

Technology: World Wide Web, Interactive Videoconferencing.

Cyrs, Thomas E. and Frank A. Smith, *Teleclass Teaching, A Resource Guide*. 2nd ed. Las Cruces, NM: New Mexico State University, 1990.

Overview: Overview of the whole process of implementing and using telelearning. How to make it work, audience analysis, how to maximize interaction, what sort of supplemental material is needed, evaluating the learning.

Focus: Practical how-to guide.

Audience: Faculty, administrators, instructional designers.

Medium: Softcover manual, 357 pages.

Technology: Audio and videoconferencing.

Doherty, Dan. *The Educational Technology ToolKit: A Guide to Using New Technologies in the Classroom*. http://www.camosun.bc.ca/~avserv/toolkit/ [Victoria, B.C.], B.C. Ministry of Education, Skills and Training. 1996 (revised 1998).

Overview: This demonstration web site contains extracts from *The Educational ToolKit*. The ToolKit contains guidelines, checklists, sample media, learning activities and case studies organized into self-contained modules to help you learn the basics about using new educational technologies. Also includes resource directory of sources of supply of hardware, software, services. Contact the author (doherty@camosun.bc.ca) for information on how to obtain the full package of materials.

Focus Instruction using a variety of tools.

Audience: Instructors, instructional support, educational administrators, beginner to advanced.

Media: Modular series of unpublished booklets, web site.

Technologies: Computer Presentations, Internet & Web, multimedia, videoconferencing.

Erickson, Berit. *Life on the Internet Beginner's Guide*. http://www.screen.com/start/guide/ Cochran Interactive. October 1998 (17 March 1999).

Overview: Information on how to get started with a variety of Internet services including e-mail, access to web sites, construction of your own web site, netiquette, chat, Usenet, FTP and Gopher. Uses a fair amount of jargon (usually with links to definitions, but beginners beware!). Lots of links to other resources.

Audience: General, intermediate to advanced.

Technology: E-mail, list servers, web site development, Internet.

Haughey, Margaret and Anderson, Terry. *Networked Learning, the Pedagogy of the Internet*. Montreal: Cheneliere/McGraw-Hill, 1998.

Overview: Part of the *Lifelong Learning* series, guides for professionals who want to use learning technologies to facilitate independent learning and communication. Definition of networked learning. The advantages of networked learning, how it works, Internet, intranet, software, synchronous and asynchronous tools, how to prepare, facilitate and evaluate networked learning. Excellent bibliographies with each chapter.

Focus: The use of e-mail, computer conferencing, Internet-based resources.

Audience: Faculty, administrators. Beginner to advanced.

Medium: Soft cover book with accompanying diskette.

Technology: Computer-mediated communication, e-mail, conferencing, desktop videoconferencing, videoconferencing, audio conferencing.

Houten-Kemp, Mary. *Mary Houten-Kemp's Everything E-mail* http://everythingmail.net, Internet Mail Services Network, Inc., November 1998 (17 March 1999).

Overview: Site includes a glossary and product descriptions, links to other interesting sites about electronic mail. How-to get started with e-mail, free e-mail, commercial products and e-mail distribution lists.

Audience: General

Technology: E-mail, list servers.

Internet.com LLC. *PC Webopedia.* http://www.pcwebopedia.com/ Internet.com LLC. Revised daily, (17 March 1999).

Overview: Self-described: "The #1 online encyclopedia and search engine dedicated to computer technology. Enter a search term or browse through the categories, and sail the Web!" This site has a little of everything to do with use of computer technology and networking. Search for a computer term, see its definition and links to related web sites. Users can also request that terms be added or submit their own URL's for inclusion in the page.

Audience: General

Technology: E-mail, list servers, desktop videoconferencing.

InterQuad Professional IT Education. *InterQuad Guide to the Internet* http://www.interq.co.uk/gutoinet.htm. InterQuad Professional IT Education, (18 March 1999).

Overview: A general introduction to the Internet, the World Wide Web, and e-mail. Definitions, services, access to professional certification information. Includes a glossary, do's and don'ts of web page design, search engines, security, firewalls, what to look for in an Internet Service Provider.

Audience: General to highly technical.

Technology: Web site, e-mail.

MacDonald, Donald. *Audio and Audiographic Learning: the cornerstone of the Information Highway.* Toronto: Chenelière/McGraw-Hill, 1998.

Overview: Part of the Lifelong Learning series, guides for professionals who want to use learning technologies to facilitate independent learning and communication. Defines audio and audiographic learning, explains advantages, shows how to use, describes successful experiences. Question and answer format. Design and preparation, support materials, startup, techniques, evaluation, glossary.

Focus: Instructional use of audio technologies. How-to and examples.

Audience: Instructors, Educational administrators. Beginner.

Medium: Soft-cover book with accompanying videotape and workbook.

Technologies: Audio conferencing

Office of Instructional Development, University of Maryland University College. *IVN: Interactive Video Network Faculty Guide and Technical Training Manual*. 2nd ed. University of Maryland University College, 1995.

Overview: Defines interactive video, the classroom, the audio and video environment, learning theory, planning and carrying out an interactive video class. Types of visuals to use, how to use the microphone, etc.

Focus: Teaching in the Maryland system using their videoconferencing facilities.

Audience: Faculty

Medium: 70-page wire-bound booklet.

Technology: Videoconference

Roberts, Judith M. *Compressed Video Learning: Creating Active Learners*. Toronto: Chenelière/McGraw-Hill, 1998.

Overview: Part of the Lifelong Learning series, guides for professionals who want to use learning technologies to facilitate independent learning and communication. Book is designed to help one begin the process of becoming a skilled facilitator of Video learning. Starts with when and why, how to overcome resistance, jargon-free overview of the technology, communication, space, human and financial issues. Examples of successful use, how to use successfully, requirement for and use of support materials, presentation techniques, importance of audio quality, camera techniques, evaluation of the experience.

Focus: How-to for beginners in using videoconferencing, with examples of successful implementations.

Audience: Instructors, Educational administrators. Beginner to intermediate.

Medium: Soft-cover book with accompanying videotape.

Technologies Videoconferencing

Roger Smith Software. *Arrow Mailing List Manager.* http://www.jadebox.com/arrow Roger Smith Software, 1997 (17 March 1999).

Overview: Commercial site for downloading demo version or buying a full version of the Arrow Mailing List Manager. Includes some general information on mailing list management, links to reviews of this product

Audience: General

Technology: List servers

Soules, Marshall. *Enhancing Capacity with Videoconferencing.* Malaspina University College, 1996.

Overview: Report on a pilot project in distance education using videoconferencing. Recommends appropriate instructional practices to ensure student success. Twenty guidelines for videoconferencing.

Focus Mostly oriented to teaching an ongoing course; much of the information also applies to planning and holding meetings.

Audience: Educators, educational administrators, instructional designers. Beginner to intermediate.

Medium: Bound report, 161 pages.

Technologies Videoconferencing

Swift, Mike. *Tele-learning, a Practical Guide.* The Open Polytechnic of New Zealand, 1993.

Overview: Descriptions of the telelearning classrooms provided by the Open Polytechnic of New Zealand. Faculty guide on how to use the technology.

Focus: Technical how-to for users of the technology.

Audience: Faculty, administrators.

Medium: Soft-cover, 62 pages.

Technology: Audio conferencing, videoconferencing.

Texas Education Network. *Netiquette.* www.sendit.nodak.edu/sendit/helpdesk/net.html Texas Education Network, 14 July 1998 (17 March 1999).

Overview: Guidelines on network etiquette, lists of e-mail and distribution list do's and don'ts, network users' responsibilities, copyright, the Ten Commandments of Computer Ethics.

Audience: General

Technology: E-mail, list servers.

Tucci, Sharon. *Start your own list.* http://www.listhost.net/articles/listbasics.htm Listhost.net, 1999 (17 March 1999).

Overview: This site is a marketing tool for a commercial "how-to" e-book guide to using lists in marketing. However, it gives some definitions and guidance regarding the choices and decisions necessary in the process of setting up your own e-mail distribution list.

Audience: General

Technology: List servers

White Pine Software. *CU-SeeMe.* http://www.wpine.com/. (17 March 1999).

Overview: Home site for the commercial version of CU-SeeMe desktop videoconferencing software. A free limited-time trial version of the software can be downloaded, or you may purchase and download the full version of the software. Product news, descriptions, etc. Little general information.

Audience: General

Technology: Desktop videoconferencing

Witherspoon, John P. *Distance Education: A Planner's Casebook*. Western Interstate Commission for Higher Education (Publication Number 2A283), July 1996.

Overview:	Definition of distance education, technologies, principles of good practice for electronically offered academic degrees. Includes case studies. Brief summaries of the new virtual institutions.
Focus:	Instructional use, program planning and implementation.
Audience:	Educators and educational administrators.
Medium:	Soft-cover book
Technology:	Audio conferencing, computer-mediated communication, videoconferencing and recording.

Appendix V: Videoconference Pilot

In this section, the researcher for this project, Sarah Stephens, outlines the preparation for a one-hour combined video/audioconference meeting of the Practical Nursing Articulation Committee that was held on July 22, 1998. Ms. Stephens, who acted as the conference coordinator, offers her analysis of the success of the conference and makes suggestions for future actions.

Preparation

The Practical Nursing Articulation Committee was one of two selected for assistance in piloting new approaches of "getting things done" via use of telecommunications.

At the March 27, 1998 meeting of the Practical Nursing Articulation Committee at Vancouver Community College, the consultant met with the group. I made a brief presentation to the eight people in attendance on the various telecommunication technologies, their strengths and weaknesses, and where they were best used. The group indicated that they make limited use of e-mail. The barriers to further use were lack of access by some members, which could not be practically addressed by the project. The group also had used audio conferencing in the past and might use it again, without further assistance. There was little interest in web or other computer-mediated communication, but high interest in trying a videoconference.

On July 22 the Practical Nursing Articulation Committee held a one-hour meeting via videoconference. The four sites with Practical Nursing programs in British Columbia are: Vancouver Community College, Okanagan University College (Kelowna), College of the Rockies (Cranbrook) and Malaspina University-College (Nanaimo). Two of these sites did not have video conferencing facilities. (VCC and OUC). For this one-time project, Douglas College was willing to lend use of their facilities, providing a lower mainland location where the VCC representatives and the professional organization representatives could attend. For Okanagan, it was determined that a voice-only link via speakerphone would be used.

After investigating the costs (see Appendix V), it was decided that a one-hour session fit better within the available budget, as compared to a two-hour session.

I contacted the group responsible for videoconferencing facilities at Douglas College and explained the locations and time desired. The technical support person made all phone calls to bridge providers, obtaining quotes for the services requested. They also contacted the technical people at the other two sites to check on room availability. Once everything looked possible, everyone had to be contacted again to confirm that after we found out what it cost we still wanted to do it.

In the meantime, I had reminded all participants of the plans and re-confirmed the attendee list. There were changes, and most people in this group were available via voice mail or fax. (e-mail of course would have made this "arranging" easier).

Two to three weeks before the videoconference I faxed the attendee list to all proposed attendees, asking them to re-confirm their plans. There were a few minor changes at this point, including another person indicating that they would be unavailable.

About a week before the videoconference I faxed a copy of some preparation information (from the BC Ministry of Education web site: www.bced.gov.bc.ca/vidcon) to all those planning to attend. In hindsight, this probably should have gone out sooner.

A few days before the videoconference, I received a draft agenda from the committee chair. She asked me to open with some information about "how to"; and offered to give me time at then end to wrap up the videoconference. This worked well, but again, the distribution was a little late, as one participant had not received the agenda in advance.

The Meeting

The meeting went off as scheduled. All participants were present in their respective locations on time and ready to go.

During the meeting

- I kept my "startup" remarks short, asking each participant what experience they had, reminding them about how the switching worked, asking them to pause long enough to let others speak, use the mute button, and avoid rapid movements. There was a range of prior experience and I think exchanging this information helped the participants work together throughout the meeting.
- I was impressed at how the participants seemed able to ignore the technology and concentrate on the business content. The agenda consisted of two or three main discussion items. Each site was consulted and had an opportunity to comment on each item.
- We wrapped up by having each participant briefly state what they were the strengths and weaknesses of videoconferencing.

The consensus was:

- The chairperson had previous videoconference experience (not as a meeting chair in this case, but as an instructor)
- With a multi-site conference, the delay in the video switching was somewhat disconcerting. Interrupting the speaker did not work. However, when the person leading the discussion "polled" the other sites for their input, it seemed to work well. I had a strong feeling that some off-line means to "raise your hand" and ask to be recognized would have made things much smoother.
- Presence of a fax machine in the videoconference room was useful. It also provided a second phone line, as we were audio conferencing on the main phone, had we needed to seek technical assistance from outside the room.
- Although it was not used this time (each organization had only one representative) it was recognized that it could be a positive way to include more attendees from each organization at no additional cost.

Things that did not work well:

- Interrupting the speaker
- When two people started to speak at the same time
- When the chair asked for feedback in an open way, rather than recognizing the sites in turn (this often led to two people speaking at the same time, backing off, then both trying again, etc.)

Limitations (challenges)

- Lack of facilities (two of the organizations had no videoconferencing facilities).
- Financial implications
- Learning curve with the technology—for these users this appeared to be fast, and not a major limitation—for some this may be a greater barrier
- Stress level was fairly high for all participants, awareness of the technology never really faded out completely
- Scheduling and availability of people. With a videoconference meeting, there appears to be more effort to "squeeze it in" and less commitment to attend. Articulation has only so much priority and these people are busy with many other high-priority tasks. When people plan to travel, more commitment has been made, and, for example, teaching replacements are arranged.

Things to check technically when setting up such a meeting (there are other check lists also available.)

- Availability of facilities
- Costs of communication (bridging)
- Costs, if any, for facilities (room, equipment, etc.) at each site
- Make sure participants at each site know where to go, and have some information on how to prepare if they are new to the medium
- If there are any visuals which can be delivered in advance it helps
- Is there a fax machine, document camera, etc. Make sure someone at each site visits the facility in advance to learn how to use any these useful pieces of equipment.
- Is there an additional phone line if you're using the speaker phone for your conference
- In advance, find out how to contact the technical support people if they are needed during the conference

Prepare for the meeting:

- Confirm participant list (two to three weeks in advance)
- Send out video conferencing tips or web addresses of the location of those tips (about two weeks in advance)
- Send out agenda and any meeting materials (at least a week in advance)

Conclusions:

The meeting was successful in carrying out articulation committee business. The participants did not think it would be able to replace a regular all-day or two-day meeting, for a number of reasons. They recognized that between such meetings if an issue needed resolution and if there was a requirement for groups of people at each location to participate, it would make sense to use a videoconference approach. There was general agreement that it was stressful and ideally should be used in one hour segments rather than longer sessions.

Appendix VI: Videoconference Cost Analysis

The following table shows a cost comparison between a video conference meeting and a face-to-face meeting.

Three people were at locations outside the Lower Mainland and three attended from the Lower Mainland. Local travel and expenses for those from the Lower Mainland would be similar for either approach so they were omitted. Another factor when comparing costs is that with the videoconference, several people could attend at each location at no additional expenditure. It would significantly increase the cost of a face-to-face meeting if more people traveled to attend.

	Costs for one-hour video conference meeting (actual, three sites, June 1998)	Costs for four-hour video conference meeting (estimate, four sites)	Costs for four-hour face to face meeting (estimate)
Bridging and Long Distance Charges for video conference	$323.76	$1600.00[1]	-
Long distance charges to Kelowna for audio link (June 22, 1998)	$13.26	-	-
Use of Video Conference Rooms	-[2]		-
Travel	-	-	$1300.00[3]
Accommodation	-	-	$100.00
Meal Allowance, 3 people, one day	-	-	$105.00
Totals	$340.02	$1600.00	$1505.00

Column One shows actual costs of the videoconference meeting held in June 1998.
Column Three shows the costs for a one-hour face-to-face meeting.

The costs for a one-hour face-to-face meeting would not be much different from the costs for a several-hour face-to-face meeting. The costs for a longer videoconference meeting will be higher than those for a one-hour meeting, based on an hourly connection charge. Column Two was prepared in an attempt to identify the "break-even" point in cost. In addition, the cost was adjusted to assume four sites participated via video, rather than the one audio site and three video sites that were used.

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[1] Assuming that a full video link to the fourth location would increase costs proportionally (a reasonable assumption), the videoconference cost is adjusted to 4/3 times 323.76 or approximately $400 per hour.

[2] This analysis assumes that use of the video conferencing room is provided by each institution at no cost to the participants. Rental rates of $50 to $100 per hour are not unusual.

[3] Travel, accommodation, meal allowance

- From College of the Rockies $785 ($650 airfare and transport, $100 one night hotel, $35 meal allowance)
- From Malaspina University-College $135 (ferry, meal allowance)
- From Okanagan University-College $685 ($650 airfare and transport, $35 meal allowance)
-

The costs (to individuals or to institutions) of time spent travelling have also been ignored. If included they would increase the costs of the face-to-face meeting.

At four hours or longer, traveling would appear to become more cost-effective than video conferencing for this group. One must be cautious, however, in trying to extrapolate from this analysis. Other group sizes and travel needs would need to be assessed individually to identify the breakeven point for each situation.

Appendix VII: Acknowledgements

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